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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PERUNGAVOOR, SATHYANARAYA V

ART UNIT

PAPER NUMBER

2624

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,843	<b>Applicant(s)</b> FUJIMATSU ET AL.	
	<b>Examiner</b> SATH V. PERUNGA VOOR	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)                |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application      |
| Paper No(s)/Mail Date _____  | 6) <input checked="" type="checkbox"/> Other: <u>John J. Love Memo</u> |

Art Unit: 2624

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

[1] A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 6, 2008 has been entered.

### ***Response to Arguments/Amendments***

[2] Presented arguments have been fully considered, but are rendered moot in view of the new ground(s) of rejection necessitated by amendment(s) initiated by the applicant(s).

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

[3] Claims 20 and 24 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory “process” under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (Reference the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled “Clarification of ‘Processes’ under 35 U.S.C. 101”). The instant claims neither transform underlying subject matter nor positively tie to another statutory

Art Unit: 2624

category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

If the applicants want a more detailed explanation please contact the Office of Patent Legal Administration (OPLA) at (571) 272-7701. Since, Examiner is required follow this memorandum and cannot elaborate further than what it recites.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[4] Claims 1-6, 11, 12, 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al. ("Oda") [US 6,850,631 B1] in view of Wildes et al. ("Wildes") [US 5,572,596].

Regarding claim1, Oda discloses the following claim limitations:

An eye image pickup device [fig. 1] comprising: an eye image pickup unit (*i.e.* 3) for capturing an eye image [fig. 1; col. 2, ll. 59-60]; and a display unit (*i.e.* 2) for displaying the display image (*i.e. iris image*) formed by the display image formation unit (*i.e.* 1) [fig. 1];

Oda does not explicitly disclose the following claim limitations:

a display image formation unit for forming a display image from the eye image by degrading an at least iris containing area in the eye image with a condition of

Art Unit: 2624

retaining a shape of the iris-containing area and a shape of a pupil in the iris-containing area; and

However, in the same field of endeavor Wildes discloses the deficient claim limitations, as follows:

Forming an image (*i.e.* 310) from the eye image (*i.e.* 300) by degrading (*i.e.* 302) an at least iris containing area (*i.e.* *entire image*) in the eye image (*i.e.* 300) with a condition of retaining a shape of the iris-containing area (*i.e.* *large oval*) and a shape of a pupil in the iris-containing area (*i.e.* *small circle*) [*fig. 3*].

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Oda with Wildes and subsample the images, the motivation being lower computational demands [*col. 7, ll. 60-65*].

Regarding claim 2, Oda meets the claim limitations, as follows:

An authentication device comprising: the eye image pickup device [*fig. 1*] according to claim 1; an authentication information formation unit (*i.e.* 35) for forming authentication information (*i.e.* *code*) from the eye image (*i.e.* *iris image*) of a user to be authenticated entered from the eye image pickup unit (*i.e.* 3) [*col. 6, ll. 25-32*]; and an authentication unit (*i.e.* 35) for authenticating the user by comparing and collating the authentication information with registered authentication information (*i.e.* *code pre-registered*) which has been registered previously [*col. 6, ll. 25-32*].

Regarding claim 3, Oda meets the claim limitations, as follows:

Art Unit: 2624

The authentication device according to claim 2, wherein the display image formation unit (*i.e.* 1) forms a display image (*i.e. iris image*) used for guiding the user about an eye position [*col. 7, ll. 5-15*]; and the authentication information formation unit (*i.e.* 35) forms the authentication information (*i.e. code*) from the eye image (*i.e. iris image*) of the user, the eye image (*i.e. iris image*) being guided to one of a specified position and a specified region by the display image (*i.e. iris image*) on the display unit [*col. 6, ll. 25-32; col. 7, ll. 5-15*].

Regarding claim 4, Oda meets the claim limitations, as follows:

The authentication device according to claim 2 further comprising: an authentication information registration unit (*i.e.* 35) for registering, as registered authentication information (*i.e. stored code*), the authentication information (*i.e. code*) formed from the eye image of the user (*i.e. iris image*) [*col. 6, ll. 25-32*], wherein the display image formation unit (*i.e.* 1) forms a display image (*i.e. iris image*) for determining whether the eye image of the user should be registered or not (*i.e. in focus or not, if not in focus don't register*) [*col. 7, ll. 5-35*]; and the authentication information registration unit (*i.e.* 35) registers the authentication information (*i.e. code*) as the registered authentication information (*i.e. stored code*) after the display image (*i.e. iris image*) formed by the display image formation unit (*i.e.* 1) is displayed on the display unit [*col. 6, ll. 25-32; col. 7, ll. 27-35*].

Regarding claim 5, Oda meets the claim limitations, as follows:

Art Unit: 2624

The authentication device according to claim 2, wherein the display image formation unit (*i.e.* 1) forms the display image (*i.e.* *iris image*) by selectively applying an image process (*i.e.* *geometrical pattern*) to the at least iris-containing area (*i.e.* *iris region*) in the eye image [fig. 1; col. 8, ll. 65-67].

Regarding claim 6, Oda and Wildes meet the claim limitations, as follows:

The authentication device according to claim 5, wherein the authentication information formation unit (*i.e.* 35) comprises: an eye position detection unit (*i.e.* 35) for detecting an eye position (*i.e.* *position of iris and pupil*) from the eye image [col. 9, ll. 12-15]; and an eyelid position detection unit (*i.e.* 35) for detecting an eyelid position (*i.e.* *type of eye openings*) from the eye image [col. 9, ll. 3-10]; and the display image formation unit determines the at least iris-containing area (*i.e.* *iris region*) in the eye image from the eye position and the eyelid position, and selectively performs the image process (*i.e.* *geometrical pattern*) [col. 9, ll. 11-27].

Regarding claim 11, Wildes meets the claim limitations, as follows:

The authentication device according to claim 2, wherein the display image formation unit forms a display image by reducing the number of pixels (*i.e.* 302) composing the eye image (*i.e.* 300) [fig. 3].

Regarding claim 12, all claimed limitations are set forth and rejected as per discussion for claim 11.

Art Unit: 2624

Regarding claim 17, Oda meets the claim limitations, as follows:

The authentication device according to claim 5, wherein the display image formation unit forms a display image by replacing the at least iris-containing area in the eye image with a specified image (*i.e. geometrical pattern*) [col. 8, ll. 65-67].

Regarding claim 18, Oda meets the claim limitations, as follows:

The authentication device according to claim 2 further comprising: an image quality determination unit (*i.e. 35*) for determining whether an eye image captured by the eye image pickup unit is adequate in quality or not (*i.e. focus*) [col. 7, ll. 5-15], wherein the authentication information formation unit (*i.e. 35*) forms the authentication information (*i.e. code*) of an eye image which has been determined to be adequate in quality (*i.e. focus*) by the image quality determination unit (*i.e. 35*) [col. 7, ll. 27-35].

Regarding claims 19-21, all claimed limitations are set forth and rejected as per discussion for claims 1-6.

Regarding claims 22 -25, Oda discloses further comprising: an eye position detection unit for detecting an iris-pupil area from the eye image (“the CPU 35 specifies the position of a dark portion 51 (a portion including the iris 7 and a pupil 52) from the left image (photographed image of an eye, Oda, column 9, line 12”).

Oda does not explicitly teach an eyelid position detection unit for detecting an eyelid area from the eye image, wherein the display image formation unit determines the iris-containing area by subtracting the eyelid area detected by the eyelid position detection unit



Art Unit: 2624

from the eye image captured by image pickup unit and calculating an area which overlaps with the iris-pupil area detected by the eye position detection unit.

Oda does teach the concept of an eyelid position detection unit for detecting an eyelid area from the eye image, wherein the display image formation unit determines the iris-containing area by subtracting the eyelid area detected by the eyelid position detection unit from the eye image captured by image pickup unit and calculating an area which overlaps with the iris-pupil area detected by the eye position detection unit ("Next, the CPU 35 obtains the contour of the dark portion 51. The CPU 35 can obtain the contour of the dark portion 51 by looking for areas where the difference in brightness is large because there is a substantial difference in brightness between the dark portion 51 and a peripheral white of the eye portion 53", Oda, column 9, line 19, the contour of Oda's dark area is bounded by both the white of the eye and possibly the edges of the eyelid, both should appear as differences in brightness with the dark iris/pupil area).

It would have been obvious at the time the invention was made for one of ordinary skill in the art to apply the boundary calculation method of Oda to include separating the eyelid area from the iris in order to "acquire iris code for a person to be identified in a rapid and accurate manner" (Oda, column 21, line 20). The signal of interest to Oda is the pattern of the iris and as described above, Oda does separate the iris-pupil area from the peripheral white of the eye portion, it would be natural to also exclude any portion of the eyelid that intrudes upon the iris image.

Art Unit: 2624

[5] Claims 7-10, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al. (“Oda”) [US 6,850,631 B1] in view of Wildes et al. (“Wildes”) [US 5,572,596] further in view of Bonneau [US 5,581,630].

Regarding claims 7-10, Oda and Wildes disclose the claim limitations as set forth above.

Oda and Wildes do not explicitly disclose the following claim limitations:

The display image formation unit forms a display image by subjecting the eye image to compression, wherein the compression is JPEG compression.

However, in the same field of endeavor Bonneau discloses the deficient claim limitations, as follows:

Subjecting the eye image to compression, wherein the compression is JPEG compression [col. 6, ll. 8-12].

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Oda and Wildes with Bonneau and compress images, the motivation being lower bit requirement [col. 5, ll. 1-5].

Regarding claims 15 and 16, all claimed limitations are set forth and rejected as per discussion for claims 7-10.

[6] Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda et al. (“Oda”) [US 6,850,631 B1] in view of Wildes et al. (“Wildes”) [US 5,572,596] further in view of Sadahito et al. (“Sadahito”) [JP 2003-087632].

Art Unit: 2624

Regarding claims 13 and 14, Oda and Wildes disclose the claim limitations as set forth above.

Oda and Wildes do not explicitly disclose the following claim limitations:

The authentication device according to claim 2, wherein the display image formation unit forms a display image by adding specified noise to the eye image.

However, in the same field of endeavor Sadahito discloses the deficient claim limitations, as follows:

Forming a display image by adding specified noise (*i.e. mosaiced*) to the image *[abstract]*.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Oda and Wildes with Sadahito and add mosaicing, the motivation being to protect privacy *[abstract]*.

Regarding claims 15 and 16, all claimed limitations are set forth and rejected as per discussion for claims 7-10.

### ***Contact Information***

[7] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Matthew C. Bella whose telephone number is (571) 272-7778, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dated: November 5, 2008

/Sath V. Perungavoor/

Sath V. Perungavoor

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